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(71) Applicant (for all designated States except US): **GEODE ELECTRONICS LLC** [US/US]; Suite 155, 500 International Drive, Mount Olive, NJ 07828 (US).

(71) Applicants and

(72) Inventors: **EMERSON, Harry, E., III** [US/US]; 41 Karen Place, Budd Lake, NJ (US) **GRYWALSKI,**

**William, A.** [US/US]; 77 Lozier Road, Budd Lake, NJ 07828 (US). **GERALD, Lebow, M.** [US/US]; 108 Westlake Drive, Valhalla, NY 10595 (US).

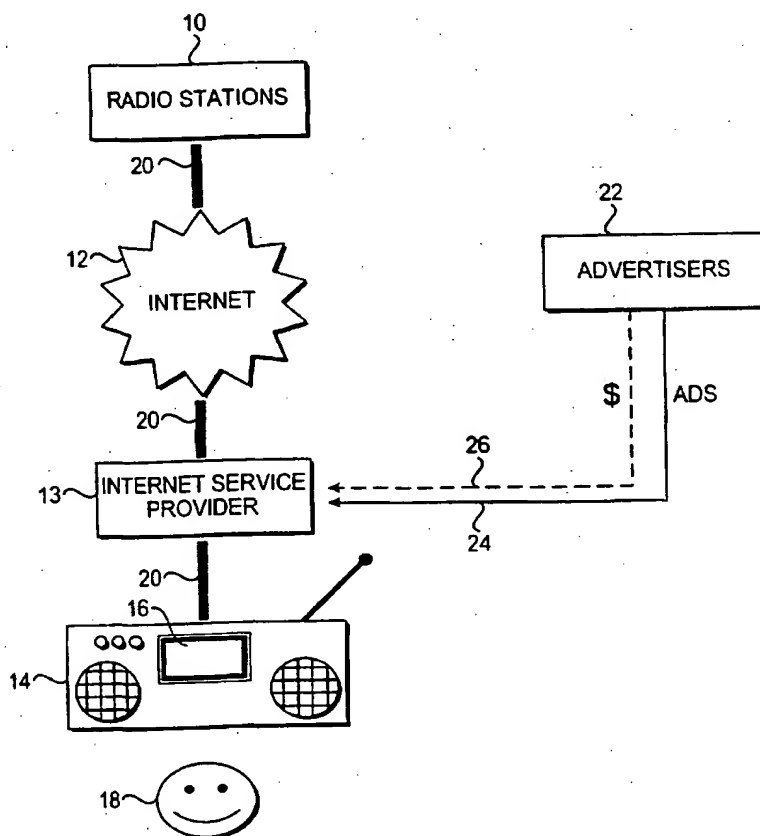
(74) Agents: **MELLER, Michael, N.** et al.; Anderson Kill & Olick, 1251 Avenue of the Americas, New York, NY 10020-1182 (US).

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(54) Title: **METHOD FOR GENERATING REVENUE BY SUBSTITUTING COMMERCIALS IN AN INTERNET RADIO BROADCASTING SYSTEM**



(57) Abstract: An Internet Service Provider or Internet Hosting Service is enabled to provide a free Internet connection to a user of an Internet Radio System by generating revenue through sale of advertising for delivery to the user. The Internet Hosting Service cooperates with one or more radio stations broadcasting their content on the Internet, and one or more advertisers and Internet Service Providers, to generate revenue by substituting replacement audible commercials for those originally broadcast. Revenue through delivery of the replacement commercials enables the Internet Hosting Service to provide a free Internet connection to the user.

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METHOD FOR GENERATING REVENUE BY SUBSTITUTING COMMERCIALS IN AN INTERNET  
RADIO BROADCASTING SYSTEM

5                    **CROSS-REFERENCE TO RELATED APPLICATIONS**

This application claims the benefit of United States Provisional Patent Application  
No. 60/119,446, filed February 10, 1999, entitled "Method For Modifying Advertising  
Content Of Internet Broadcasts".

10                    **BACKGROUND OF THE INVENTION**

1.       **Field of the Invention**

The present invention relates to a method for substituting replacement commercial  
advertisements in place of original broadcast commercials for radio programs broadcast via  
the Internet; more particularly, to a method for transmitting advertisements to a user of an  
15 Internet Radio System in which the cost of the connection from an Internet Service Provider  
is subsidized by advertising; and still more particularly to a method for substituting  
replacement commercial advertisements in place of original broadcast commercials for radio  
programs broadcast via the Internet which subsidize the cost of the Internet connection of a  
user of an Internet Radio System.

20                    **2. Description of the Prior Art**

Advertising is the primary mechanism by which producers of products and services  
capture the attention of potential consumers. In today's global marketplace of chaos and  
dislocation, the need for advertising has never been greater. Traditionally, mass advertising

occurs by way of mass distribution through television, radio, newspapers and the like. Usually, advertisers prescribe the media content and pay for the mass distribution thereof. In some instances, the consumer subsumes a portion of the costs of the advertisements, as for example, by paying for a newspaper subscription. The advent of computer-driven  
5 technology, and especially the Internet, has rendered traditional advertising methods obsolete.

The Internet is a system of linked computers that provides for global information exchange and includes innumerable sites, each of which presents advertising, research and other information about a particular organization. Many organizations now rely on the  
10 Internet to obtain and transmit crucial and, oftentimes, sensitive information. Thus, the Internet has quickly become one of the most effective means by which an organization can globally advertise its goods and services.

Computer users are connected to the Internet by means of an Internet Service Provider ("ISP"). Generally, these ISP's require that the user provide some type of  
15 monetary consideration for Internet connection. Typically, a user subscribes to an ISP account in which the user pays a fee for the ability to access the Internet. ISPs provide three principle types of resources to consumers in exchange for the monthly fee: (i) dial in ports, each consisting of a phone line and a modem, one pair of which is consumed by each user for the duration of their connection; (ii) computer systems for processing email and hosting  
20 user Web pages; and, (iii) bandwidth for data transmitted to the user from other locations on the Internet as the users view pages on Web sites. The computer systems resource requirement is relatively independent of subscriber usage, whereas the ISP costs for both dial in ports and bandwidth are usage dependent.

There are several contemporaneous advertising supported arrangements wherein computer users are given free Internet access through an ISP. These advertising arrangements, in general, present visual advertising material ("banner ads") to the computer users in exchange for the free service. With these arrangements, the entity managing the free service is able to control the presentation of advertising such that the amount or duration of advertising that the user is exposed to is proportionate to the amount of time spent on line. In this way, the ISP can recoup the cost of provisioning the service regardless of the amount of time the user stays connected.

It is presently possible to listen to radio programs with a personal computer or other device capable of receiving audio data via the Internet. This is because it is becoming conventional for a regular broadcast radio station to make its programs available via the Internet. Internet radio programs originate from many different regions of the world. As a result, they are frequently sprinkled with commercial advertisements that are targeted to the region from which the program originated. A commercial for an automobile dealer in Lisbon is of little value to an Internet listener in Philadelphia. On the other hand, an Internet Hosting Service providing radio station content to the listener would benefit by substituting commercials of advertisers interested in reaching such listeners. The original commercials provide no benefit to the original radio station or advertisers, nor to the listener, nor are they a source of revenue for a business organization such as an Internet Hosting Service which presents radio stations on the Internet.

There remains a need in the art for an effective way to generate revenue by selling advertising which will replace original broadcast commercials in radio programs transmitted via the Internet. There also remains a need in the art for an effective way to generate

revenue by selling advertising to subsidize access to Internet entertainment sources for an Internet entertainment device such as an Internet Radio System. Specifically, the advertising revenue must pay the ISP to cover the cost of the resources consumed in the process of providing Internet connectivity to the user. And, there remains a need in the art for an effective way to generate revenue by selling advertising which will replace original broadcast commercials in radio programs transmitted via the Internet which can subsidize access to Internet entertainment sources for an Internet entertainment device such as an Internet Radio System.

## SUMMARY OF THE INVENTION

In accordance with the present invention, there is provided a method for generating revenue by substituting replacement commercial advertisements in place of original broadcast commercials for radio programs broadcast via the Internet. Generally stated, the method enables (a) selling replacement audio commercials; (b) generating a plurality of replacement radio commercials of various predetermined time lengths, whereby each replacement radio commercial has an associated time length; (c) digitizing the replacement radio commercials and the associated time lengths; (d) storing in an array the digitized replacement radio commercials and the associated time lengths, the array being stored by an Internet Hosting Service; (e) marking each of the broadcast radio commercials with a digital marker by the radio station, the digital marker indicating the start and duration time of the broadcast radio commercial within the Internet radio program; (f) transmitting the marked Internet radio program to the Internet Hosting Service; (g) receiving of the marked Internet radio program by the Internet Hosting Service; (h) detecting a digital marker of a

commercial on the received Internet radio program; (i) reading the duration time of the received commercial from the detected digital marker; (j) comparing the read duration time with the associated time lengths stored in the array; (k) selecting from the array a digitized replacement radio commercial having an associated time length equal to the read duration time; (l) substituting the selected digitized replacement radio commercial in place of the broadcast commercial; and (m) repeating steps (h) through (l) until the end of the Internet radio program, whereby the listener of the Internet radio program receives an edited program having one or more replacement radio commercials substituted in place of the broadcast radio commercials.

Optionally, the invention provides a method of generating revenue by selling targeted advertising wherein the advertisers specify demographic targets for their commercials, user profiles are collected about individual users, and commercials are matched to user profiles to deliver the desired targeted advertising.

Conveniently, a large percentage of radio stations utilize a computer system rather than tapes or CD's for the origination of the majority of their audio content, including music and commercials. Such systems, referred to generally as "broadcast automation systems" or "live assist systems" actually play the audio for the music or the commercial. Since the broadcast automation system maintains a listing of all audio events that the station plans to broadcast, including critical information of each event such as event type and duration, it can signal the precise beginning and ending of each event, and can transmit the identifying data associated with each event to an external system such as an Internet Hosting Service. Broadcast automation systems, having the capabilities listed above, facilitate the implementation of an advertising replacements as described herein.

Advantageously, the method of the present invention permits an organization such as an Internet Hosting Service to sell and substitute replacement advertisements in place of originally broadcast advertisements in radio programs broadcast via the Internet. The invention enables the Internet Hosting Service to generate additional revenues and to target advertisements to its customers. Customers are provided with increased opportunity to receive information concerning services or products more attuned to their needs.

Also in accordance with the present invention, there is provided a method of generating revenue for providing a free Internet connection in which the cost of the connection is subsidized by selling advertising. This method anticipates a cooperation between one or more radio stations providing their content on the Internet, one or more Internet Hosting Services providing access to the radio station content, one or more Internet Service Providers providing consumer access to the Internet, and advertisers.

Generally stated, this method enables an Internet Service Provider to transmit advertisements to a user by: (a) an organization such as an Internet Hosting Service or Internet Service Provider selling advertising; (b) creating a no-cost Internet connection between an Internet Service Provider and a user; (c) arranging for the Internet Service Provider to receive a plurality of advertisements from at least one advertiser for monetary consideration resulting from the sale of the advertising; and (d) transmitting at least one of the advertisements to the user. Preferably, the advertisements are received by the user via an Internet radio system, which permits audio as well as visual advertisement transmission. Advantageously, the method of the present invention permits a user to receive the advertisements from an Internet Service Provider via a free Internet connection in exchange for which the user hears advertisements generated by an advertiser.



And also, in accordance with this invention, there is provided a method for generating revenue to provide a free Internet connection for an Internet radio system by selling and substituting replacement audio advertising for the original broadcast advertising transmitted by an Internet radio station.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

The invention will be more fully understood and further advantages will become apparent when reference is had to the following detailed description and the accompanying drawings, in which:

**FIG. 1** is a block diagram representing the flow of information and services between at least one advertiser, a radio station on the Internet, an Internet Hosting Service, an Internet Service Provider, an Internet Radio System with a graphical interface, and an Internet Radio System user in which the user receives no-cost Internet access for radio entertainment in return for receiving at least one advertisement from the Internet Service Provider, which is monetarily compensated by the Internet Hosting Service for delivering said advertisement;

**FIG. 2** is a block diagram similar to **FIG. 1** in which the advertising is delivered from an advertiser to a radio station on the Internet, and transmitted from the radio station to the Internet Radio System via the Internet Service Provider, in which the Internet Service Provider is monetarily compensated by the radio station;

**FIG. 3** is a variation of **FIG. 1** and **FIG. 2** in which an Internet Hosting Service substitutes advertising received from the radio station with advertising received

from an advertiser, and transmits the substituted advertising to the user via the Internet Service Provider, which is monetarily compensated by said Internet Hosting Service; and,

**FIG. 4** is a block diagram representing the modification of advertisements during the flow of an Internet radio program from the program originator to the listener.

#### **DESCRIPTION OF THE PREFERRED EMBODIMENTS**

There is an opportunity for non-PC entertainment devices to access entertainment content made available on the Internet. Such a non-PC entertainment device is an Internet Radio System, also called SurferRadio™ by GEODE Electronics, LLC, as described in co-pending U.S. Provisional Patent application No. 60/115,073, filed January 7, 1999, entitled Internet Radio System, the entire disclosure of which is incorporated herein by reference thereto. In general, entertainment services suffer restricted consumer response if the consumer is charged a subscription fee. Thus, the most popular entertainment services are the free, over-the-air broadcast radio and television. These services are able to broadcast their entertainment content freely to consumers because they are supported by advertising. The advertising material is interleaved over time with the program content so that consumers are exposed to advertising proportionate to the amount of time they spend benefiting from the broadcaster's program material.

As defined in the above referenced co-pending patent application, the Internet Radio System incorporates a small display screen to enable station selection and similar processes. However, even though advertising may be presented on this display screen, the device still is considered to be a radio device whose characteristic usage will be similar to other radios;

that is, users will tend to listen to it as a background device, not watch it like a television.

Consequently, in order to provide an advertising supported scheme for an Internet Radio

System, the advertising must be audible and interleaved over time with the program content,

just like broadcast radio, so that the user will hear advertising proportionate to the amount of

5 time they spend connected to the Internet. Since an Internet Radio System is a narrow

purpose appliance suitable only to radio listening on the Internet, the amount of time spent

listening is approximately the same as the amount of time spent connected to the Internet.

Thus, interleaved advertising is proportionate to both time spent listening and time

connected.

10 In accordance with the present invention, there is provided a method appropriate to  
an organization such as an Internet Hosting Service for generating revenue by substituting  
replacement commercial advertisements in place of original broadcast commercials for radio  
programs broadcast via the Internet. Internet radio programs originate from many different  
regions of the world. As a result, they are frequently sprinkled with commercial  
15 advertisements that are targeted to the region from which the program originated. A  
commercial for an automobile dealer in Lisbon is of little value to an Internet listener in  
Philadelphia. An Internet Hosting Service providing Internet radio station access to the  
listener would benefit by substituting commercials of advertisers interested in reaching such  
listeners.

20 Optionally, the invention provides a method of generating increased revenue by  
selling targeted advertising wherein the advertisers specify demographic targets for their  
commercials, user profiles are collected about individual users, and commercials are  
matched to user profiles to deliver the desired targeted advertising.

As stated above, the invention provides a method for substituting replacement radio commercials in place of broadcast radio commercials by an Internet Hosting Service. In practice, each commercial is marked by the radio station with a digital marker that indicates the start and length of each commercial in the program broadcast. When the program is received by the Internet Hosting Service, each commercial is identified by its marker and a replacement commercial of the appropriate length is selected from a list of commercials kept by the Internet Hosting Service and substituted in place of the original commercial.

Also in accordance with the present invention, there is provided a method of generating revenue for providing a free Internet connection in which the cost of the connection is subsidized by selling advertising. This method anticipates a cooperation between one or more radio stations providing their content on the Internet, one or more Internet Hosting Services or equivalent centralized data processing facilities providing access to the radio station content, one or more Internet Service Providers providing consumer access to the Internet, and advertisers. More specifically, the method enables an Internet Hosting Service or an Internet Service Provider to transmit advertisements to a user by: (a) selling advertising; (b) creating a no-cost Internet connection between an Internet Service Provider and a user; (c) arranging for the Internet Service Provider to receive a plurality of advertisements from at least one advertiser for monetary consideration, wherein the advertisements may be received directly from the advertiser, or indirectly from the radio station or an Internet Hosting Service; and (d) transmitting at least one of the advertisements to the user in exchange for monetary compensation offsetting the cost of providing the free Internet connection. Said Internet Hosting Service may be the same entity as the Internet Service Provider. Advertisements may be audio ads inserted by the

Internet Hosting Service as replacements for audio ads received in the entertainment stream from a radio station, as described in co-pending U.S. Patent application "System for Modifying Advertising Content of Internet Radio Broadcasts" by Emerson, et al., dated February 10, 1999, the entire disclosure of which is herein incorporated by reference thereto.

And also, in accordance with this invention, there is provided a method appropriate to an organization such as an Internet Hosting Service for generating revenue to provide a free Internet connection for an Internet radio system by selling and substituting replacement audio advertising for the original broadcast advertising transmitted by an Internet radio station.

The invention will be more fully understood from the following description of the preferred embodiments, taken in connection with the appended drawings. Referring now to FIG. 1 of the drawings, there is shown a radio station 10 connected to the Internet communications network 12. The communications network 12 includes a service provider 13, also referred to as an Internet Service Provider ("ISP"), and an Internet Radio System 14 with a graphical interface 16 by which an Internet Radio System user 18 can receive, hear and view communications from the service provider 13.

As previously noted the Internet Radio System is available from Geode Electronics, LLC, under the tradename "SurferRadio™". Generally stated, Internet radios are devices for providing Internet access to audio and visual content providers that include: (a) a means to connect to the Internet encompassing a modem, modem communications software, and a phone line connections; (b) an automatic logging-in means for connecting to a predetermined Internet Service Provider including automatic dialing and an automatic login

process; (c) an authorizing identification means to identify the device type to the Internet Service Provider; (d) a means to connect to a predetermined Internet Hosting Service, which may be the same entity as the Internet Service Provider; (e) a means for custom connection to the Internet Hosting Service such that the Internet Hosting Service recognizes  
5 and cooperates with the unique nature of the device type; (f) a means to receive advertiser supported content including advertising such as interleaved audio ads and display ads; (g) a means for a display screen which can show the channel selection process, visual display ads, text and control messages, and other information deemed desirable to the consumer, advertiser, content provider and other service providers on the network; (h) a means to  
10 select among different audio content provider channels which is managed by a predetermined set of commands unique to this device type; (i) a means to select among different audio content provider channels via selections such as by content type (i.e. jazz, classical, news, sports, etc.), by location of content provider (local, city, country), and by language; and (j) audio means for receiving and playing Internet radio content such as  
15 offered by radio stations and other audio content providers broadcasting on the Internet.

As is well known, the Internet 12 comprises a multitude of sites, each of which is specific for particular information. Thus, the service provider 13 is capable of transmitting information from sources on the Internet 12, such as radio stations 10, to the user. Means for transmitting such information are readily available and outside of the scope of the  
20 present invention. Accordingly, entertainment content 20 is broadcast over the Internet 12 from the radio station 10 to the Internet Radio System 14 via the service provider 13. In accordance with the present invention, revenue is generated by service provider 13 by selling advertisements for a plurality of advertisers 22, and delivering audio, audio/visual, or

visual advertising indicated by solid line 24 to user 18 via Internet Radio System 14.

Advertiser 22 may act as an agent for the service provider 13, or may be the same entity as said service provider, and may deliver advertising 24 promoting business offerings of said

service provider. In this arrangement, the economic value derived from delivering

5 advertising 24 on behalf of the service provider will serve in lieu of monetary compensation

26 to said service provider 13. Visual advertising 24 is presented on graphical interface 16

for viewing by user 18, and audible advertising 24 is played aloud by Internet Radio System

14 in the fashion of traditional radio. As used herein, a plurality of advertisers 15 refers to

at least one advertiser. Likewise, advertisements refer to at least one advertisement.

10 Naturally, such payment 26 to the service provider 13 would conform to generally accepted

industry standards. Advantageously, the monetary consideration 26 paid to the service

provider 13 provides service provider 13 with sufficient operating revenue to provide user

18 access to the Internet 12 without payment by user 18.

The timing of the transmission of the advertisements 24 is not fixed and can be

15 based upon the preference of advertiser 22 or service provider 13. Thus, advertisements 24

can be transmitted to user 18 during initial access or during one or more preselected

intervals of time extant while Internet Radio System 14 is connected to the service provider

13 for reception of radio entertainment.

Referring now to FIG. 2 of the drawings, the entities in the diagram are the same as

20 those described in FIG. 1. User 18 connects to radio station 10 on Internet 12 via Internet

Radio System 14 and service provider 13. Radio station 10 generates revenue by selling

advertising from advertisers 22 to provide audio, audio/visual, or visual advertising 24 to

listeners 18 in return for monetary consideration 26. As part of the entertainment content

stream 20, Radio station 10 delivers advertising 24 to user 18 via Internet Radio System 14 and service provider 13, which may be played audibly, presented on graphical display 16, or both. Radio station 10, in turn, compensates service provider 13 with monetary consideration 28 for delivering entertainment content 20 to user 18, without the separate  
5 payment of a user fee. Thus, service provider 13 provides user 18 and Internet Radio System 14 with a free Internet connection.

Advantageously, this system permits a user 18 to listen to entertainment content 20 which is interleaved with audio advertisements 24 while visual advertisements are transmitted to user 18 via the graphical interface 16 of the Internet Radio System 14. In this  
10 manner, visual advertisements can be continuously transmitted to the user 18 at the same time that audio content and audio advertising are also transmitted to user 18.

Optionally, the arrangement may further comprise an Internet Hosting Service, hereinafter described as "hosting service" which may be the organization generating revenue by selling advertising to deliver to listeners 18. In FIG. 3, there is illustrated a  
15 hosting service 33 having the capability to receive transmissions from the radio station 10 and pass these transmissions onto user 18. Hosting service 33 may be any type of service which has the ability to receive communications from a radio station 10. Therefore, hosting service 33 may be a private communications entity, a broadcasting network data center, a service provider or the like. In one embodiment, hosting service 33 may comprise the same  
20 entity as the service provider 13. Importantly, as described in co-pending U.S. Provisional Patent application of Emerson et al., entitled "System for Modifying Advertising Content of Internet Radio Broadcasts", filed February 10, 1999, and as described in Fig. 4, hosting service 33 can have the capability to remove and replace advertisements, whether comprised



of audio, audio/visual, or video content, which are transmitted by the radio station 10 with advertisements of a similar nature offered by the hosting service 33. Thus, hosting service 33 has the ability to pass the entertainment content 20 received from radio station 10 through the service provider 13 to user 18, but may substitute the advertising received from the advertisers 22 in place of the advertising transmitted by radio station 10. In this instance, the hosting service 33 receives monetary consideration 26 from the advertisers. In turn, the hosting service 33 pays some or all of the monetary consideration 26 received from the advertisers 22 to the service provider 13. This channeling of revenue to the service provider 13, generated by the sale of advertising, allows the service provider to provide no-cost Internet access to a user.

As indicated above, an Internet Hosting Service generates revenue by selling advertising for delivery to Internet entertainment listeners. As illustrated by FIG. 4 of the drawings, marked Internet radio programs 42 from a plurality of radio stations 10 are sent to hosting service 33 via the Internet. The arrows in Fig. 1 indicate transfers, including Internet transfers. These Internet radio programs have broadcast radio commercials as part of their content. Ad marking systems 41, which may be broadcast automation systems of the radio stations, introduce digital markings to accompany the audio content indicating the beginning and duration of audio ads in the audio stream. Further, ad marking systems 41 may digitize the radio station audio content into packets bearing sequential serial numbers, and the digital markings which indicate the beginning and end of audio ads may relate such beginnings and endings to audio packet serial numbers. Hosting service 33 receives the marked audio stream wherein the audio may be music interleaved with commercials, and the markings may be digital data packets indicating the beginning and ending of

commercials within that audio stream. Hosting service 33 maintains a database of replacement audio ads 44 encompassing the ads and associated data describing each ad such as duration and the desired user demographics that the advertiser would like to reach.

Hosting service 33 sells advertising to generate revenue, and replaces audio ads emanating

5 from the radio station program originator 10 with replacement ads of equivalent duration

drawn from replacement ad database 44, in the process creating an edited Internet radio

program 46. The resolution of the Ad Marking System 41 in digitizing the audio stream

into serialized packets enables the creation of edited Internet radio programs 46 which are

absent of audible artifacts to indicate that ad substitution has taken place. Edited Internet

10 radio programs 46 are delivered to listeners 18 via the Internet Service Providers 13 which

provide Internet access to the listeners 18. Listeners 18 listen to the Internet radio stations

from program originators 10, hearing different ads from those who might

contemporaneously listen to the radio station's over-the-air broadcast with a conventional radio.

15 Optionally, the hosting service 33 may examine the desired user demographics associated with replacement ads 44 and match them against the user demographic database

45 comprised of demographic information about listeners 18. If listeners 18 have differing

demographics, the edited Internet radio programs 46 may be unique for each demographic

type of listener 18 who may be listening to the same Internet radio station. That is, males

20 listening to Internet radio station WXYZ may receive an edited Internet radio program 46

which differs from that received by females listening to the same station.

The method for substituting replacement radio commercials in place of a plurality of broadcast radio commercials on an Internet radio program transmitted by a hosting service

33 to a listener 18 via an Internet service provider 13 is described in copending U.S. Patent Application 60/119,443 filed February 10, 1999 entitled "System for Modifying and Targeting Advertising Content of Internet Radio Broadcasts", the entire disclosure of which is incorporated herein by reference thereto, and comprises the steps of: (a) generating a plurality of replacement radio commercials of various predetermined time lengths, whereby each replacement radio commercial has an associated time length; (b) digitizing the replacement radio commercials and the associated time lengths; (c) storing in an array the digitized replacement radio commercials and the associated time lengths, the array being stored by the Internet hosting service 33; (d) marking each of the broadcast radio commercials with a digital marker by the ad marking system 41, the digital marker indicating the start and duration time of the broadcast radio commercial within the Internet radio program 12; (e) transmitting of the marked Internet radio program 42 to the Internet hosting service 33; (f) receiving of the marked Internet radio program 42 by the Internet hosting service 33; (g) examining of the marked Internet radio program 42 by the Internet hosting service 13; (h) detecting a digital marker of a commercial on the marked Internet radio program 42; (i) reading the duration time of the commercial from the detected digital marker; (j) comparing the read duration time with the associated time lengths stored in the array; (k) selecting from the array a digitized replacement radio commercial having an associated time length equal to the read duration time; (l) substituting the selected digitized replacement radio commercial in place of the commercial; and (m) repeating steps (h) through (l) until the end of the Internet radio program.

Having thus described the invention in rather full detail, it will be understood that such detail need not be strictly adhered to but that various changes and modifications may

suggest themselves to one skilled in the art, all falling within the scope of the present invention as defined by subjoined claims.

**CLAIMS**

What is claimed is:

1. A method for providing a free Internet connection to a user of an Internet Radio  
5 System by enabling an Internet service provider to generate revenue by selling and  
transmitting advertisements to said user, comprising:
  - a) creating a no-cost Internet connection between an Internet service provider and a  
user;
  - b) arranging for the Internet service provider to receive a plurality of advertisements  
10 from at least one advertiser for monetary consideration; and
  - c) transmitting at least one of the advertisements to the user.
2. A method for providing a free Internet connection to a user of an Internet Radio  
System as recited in Claim 1, wherein said advertisements are audible.
- 15 3. A method for providing a free Internet connection to a user of an Internet Radio  
System as recited in Claim 1, wherein said advertisements are visual.
4. A method for providing a free Internet connection to a user of an Internet Radio  
20 System by enabling a radio station on the Internet to generate revenue by selling and  
transmitting advertisements to said user, comprising:
  - (a) creating a no-cost Internet connection between an Internet Service Provider and  
an Internet Radio System;

(b) connecting said Internet Radio System to a radio station on the Internet via said Internet Service Provider;

(c) arranging for said radio station to receive a plurality of advertisements from at least one advertiser for monetary consideration;

5 (d) said radio station transmitting at least one of the advertisements to the user via said Internet Service Provider;

(e) said radio station being enabled by said monetary consideration, to compensate said Internet Service Provider with monetary consideration and thereby provide said user with a free Internet connection that permits said user to receive said radio station's

10 entertainment and advertising content.

5. A method for providing a free Internet connection to a user of an Internet Radio System as recited in Claim 4, wherein said advertisements are audible.

15 6. A method for providing a free Internet connection to a user of an Internet Radio System as recited in Claim 4, wherein said advertisements are visual.

7. A method for providing a free Internet connection to a user of an Internet Radio System as recited in Claim 4, wherein said advertisements are audible and are interleaved  
20 with said entertainment content.

8. A method for providing a free Internet connection to a user of an Internet Radio System by enabling an Internet Hosting Service to generate revenue by selling and transmitting advertisements to said Internet Radio System, comprising the steps of:

- a) connecting said Internet Radio System accessed by said user to an Internet Service Provider;
- b) connecting said Internet Radio System to an Internet Hosting Service having access to one or more radio stations providing their program content on the Internet, which Hosting Service may be said Internet Service Provider;
- c) transmitting Internet radio programs from said radio station to said Internet Hosting Service;
- d) re-transmitting said Internet radio programs from said Internet Hosting Service to said Internet Radio System;
- e) said Internet Hosting Service receiving advertisements from one or more advertisers;
- f) transmitting at least one advertisement from said Internet Hosting Service to said Internet Radio System;
- g) said Internet Hosting Service receiving monetary consideration from said advertiser in exchange for delivering said advertisements to said user of said Internet Radio System;
- h) said Internet Hosting Service being enabled by said monetary consideration to compensate said Internet Service Provider on behalf of said Internet Radio System user and thereby provide Internet connectivity to said Internet Radio System;

- i) said user receiving said radio programs through said Internet Service Provider via said free Internet connection in exchange for receiving said advertisement on said Internet Radio System.

9. A method for providing a free Internet connection to a user of an Internet Radio System as recited in Claim 8, wherein said advertisements are audible.

10. A method for providing a free Internet connection to a user of an Internet Radio System as recited in Claim 8, wherein said advertisements are visual.

11. A method for providing a free Internet connection to a user of an Internet Radio System as recited in Claim 8, wherein said advertisements are audible and are interleaved with said entertainment content.

12. A method for generating revenue by substituting replacement radio commercials in place of a plurality of broadcast radio commercials on an Internet radio program broadcast by a radio station to an Internet hosting service, comprising the steps of:

(a) selling advertising by said Internet hosting service for delivery to listeners of said Internet radio programs;

(b) generating a plurality of replacement radio commercials of various predetermined time lengths, whereby each replacement radio commercial has an associated time length;

(c) digitizing said replacement radio commercials and said associated time lengths;



(d) storing in an array said digitized replacement radio commercials and said associated time lengths, said array being stored at an Internet service provider;

(e) marking each of said broadcast radio commercials with a digital marker by said radio station, said digital marker indicating the start and duration time of said broadcast radio commercial within said Internet radio program;

(f) transmitting said marked Internet radio program to said Internet hosting service;

(g) receiving of said marked Internet radio program by said Internet hosting service;

(h) examining of said marked Internet radio program by said Internet hosting service;

(i) detecting a digital marker of a commercial on said received Internet broadcast program;

(j) reading the duration time, of said commercial, from said detected digital marker;

(k) comparing said read duration time with said associated time lengths stored in said array;

(l) selecting from said array a digitized replacement radio commercial having an associated time length equal to said read duration time;

(m) substituting said selected digitized replacement radio commercial in place of said broadcast commercial; and

(n) repeating steps (h) through (l) until the end of said Internet radio program,

whereby the listener of said Internet radio program receives an edited program having one or more replacement radio commercials substituted in place of said broadcast radio commercials.

13. A method as recited in Claim 12 wherein said marking is performed by a radio station computer system, commonly referred to as a broadcast automation system.

5 14. A method as recited in Claim 13 wherein the audio stream of the radio station is digitized into packets bearing sequential serial numbers, and said marking of broadcast commercials by marking the start time and duration of the commercial identifies the audio packet serial numbers constituting the beginning and duration of the audio commercial to be replaced.

10 15. A method as recited in Claim 12 wherein the Internet hosting service maintains commercial type information for targeting ads to consumers, and user demographic information, and matches said user demographics to said commercial type for selecting a commercial targeted to said user.

15 16. A method as recited in Claim 13 wherein the Internet hosting service maintains commercial type information for targeting ads to consumers, and user demographic information, and matches said user demographics to said commercial type for selecting a commercial targeted to said user.

20 17. A method as recited in Claim 14 wherein the Internet hosting service maintains commercial type information for targeting ads to consumers, and user

demographic information, and matches said user demographics to said commercial type for selecting a commercial targeted to said user.

18. A method for generating revenue by an Internet Hosting Service to create a free  
5 Internet connection for a user of an Internet Radio System by substituting replacement radio commercials in place of a plurality of broadcast radio commercials on an Internet radio program broadcast by a radio station to an Internet hosting service, comprising the steps of:

(a) selling advertising of an advertiser by said Internet hosting service for delivery to users of said Internet Radio System;

10 (b) connecting said Internet Radio System accessed by said user to an Internet Service Provider;

(c) connecting said Internet Radio System via the Internet to an Internet Hosting Service having access to one or more radio stations providing their program content on the Internet, which Hosting Service may be said Internet Service Provider;

15 (d) transmitting Internet radio programs from said radio station to said Internet Hosting Service;

(e) said Internet Hosting Service generating a plurality of replacement radio commercials of various predetermined time lengths, whereby each replacement radio commercial has an associated time length;

20 (f) said Internet Hosting Service digitizing said replacement radio commercials and said associated time lengths;

(g) said Internet Hosting Service storing in an array said digitized replacement radio commercials and said associated time lengths, said array being stored at an Internet service provider;

5 (h) marking each of said broadcast radio commercials with a digital marker by said radio station, said digital marker indicating the start and duration time of said broadcast radio commercial within said Internet radio program;

(i) transmitting said marked Internet radio program from said radio station to said Internet hosting service;

(j) receiving of said marked Internet radio program by said Internet hosting service;

10 (k) examining of said marked Internet radio program by said Internet hosting service;

(l) detecting a digital marker of a commercial on said received Internet broadcast program;

(m) reading the duration time, of said commercial, from said detected digital marker;

15 (n) comparing said read duration time with said associated time lengths stored in said array;

(o) selecting from said array a digitized replacement radio commercial having an associated time length equal to said read duration time;

20 (p) substituting said selected digitized replacement radio commercial in place of said broadcast commercial;

(q) transmitting at least one of said replacement advertisements from said Internet Hosting Service to said Internet Radio System;

(r) said Internet Hosting Service receiving monetary consideration from said advertiser in exchange for delivering said advertisements to said user of said Internet Radio System;

(s) said Internet Hosting Service being enabled by said monetary consideration compensating said Internet Service Provider on behalf of said Internet Radio System user for providing Internet connectivity to said Internet Radio System;

(t) said user receiving said radio programs through said Internet Service Provider via said free Internet connection in exchange for receiving said advertisement on said Internet Radio System; and,

(u) repeating steps (h) through (p) until the end of said Internet radio program, whereby the listener of said Internet radio program receives an edited program having one or more replacement radio commercials substituted in place of said broadcast radio commercials.

19. A method as recited in Claim 18 wherein said marking is performed by a radio station computer system, commonly referred to as a broadcast automation system.

20. A method as recited in Claim 19 wherein the audio stream of the radio station is digitized into packets bearing sequential serial numbers, and said marking of broadcast commercials by marking the start time and duration of the commercial identifies the audio packet serial numbers constituting the beginning and duration of the audio commercial to be replaced.

21. A method as recited in Claim 18 wherein the Internet hosting service maintains commercial type information for targeting ads to consumers, and user demographic information, and matches said user demographics to said commercial  
5 type for selecting a commercial targeted to said user.

22. A method as recited in Claim 19 wherein the Internet hosting service maintains commercial type information for targeting ads to consumers, and user demographic information, and matches said user demographics to said commercial  
10 type for selecting a commercial targeted to said user.

23. A method as recited in Claim 20 wherein the Internet hosting service maintains commercial type information for targeting ads to consumers, and user demographic information, and matches said user demographics to said commercial  
15 type for selecting a commercial targeted to said user.

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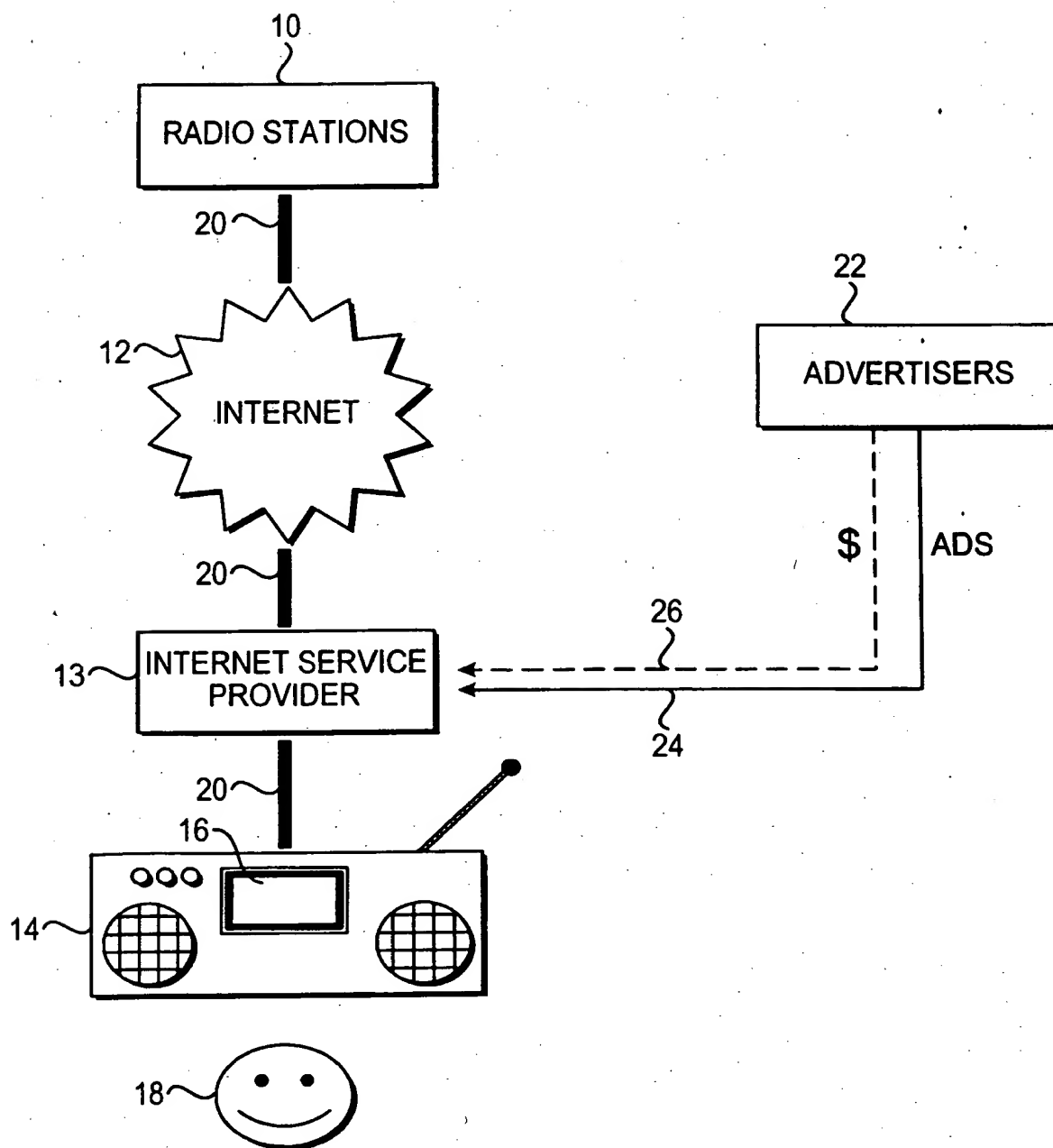


FIG. 1

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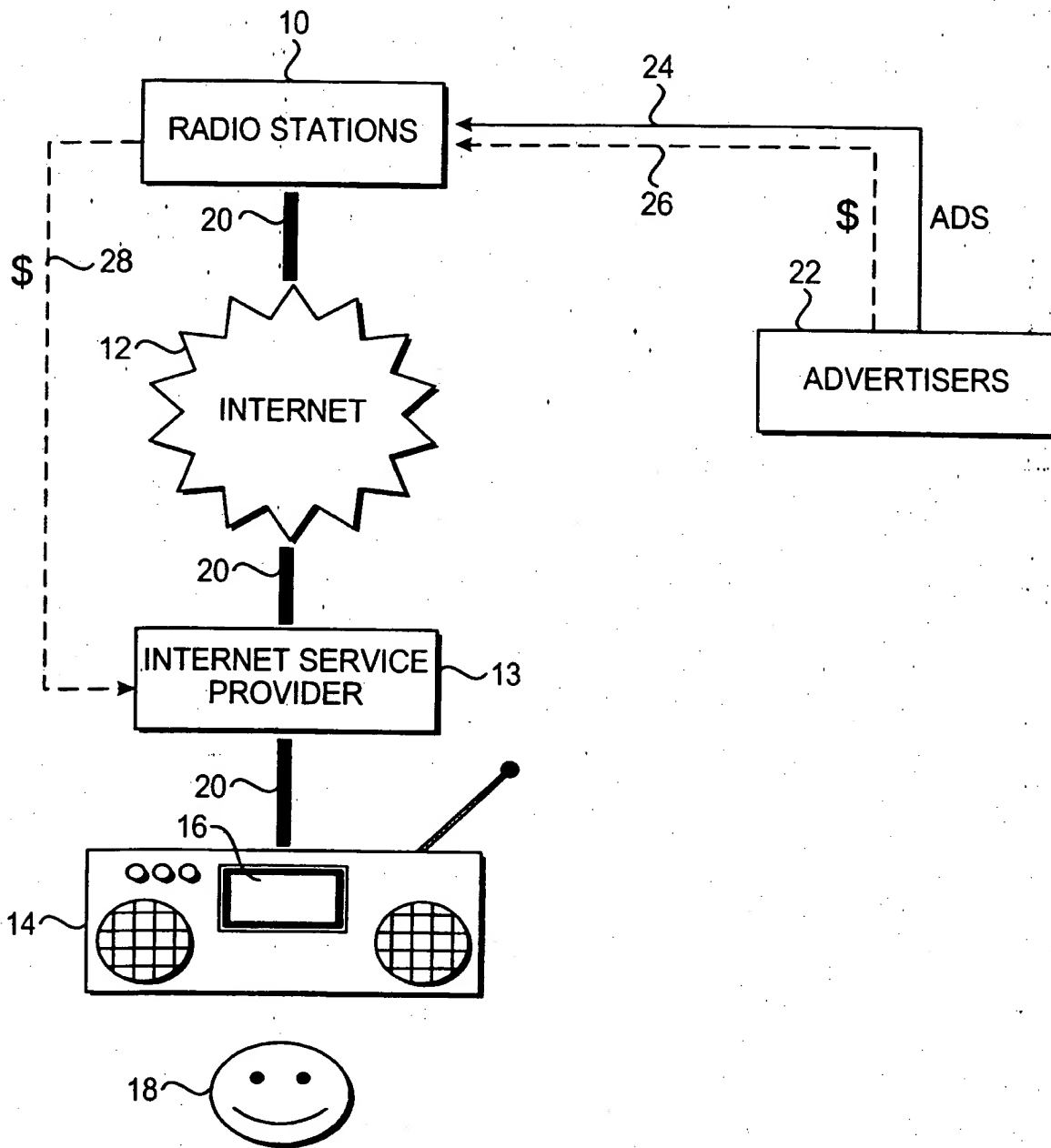


FIG. 2



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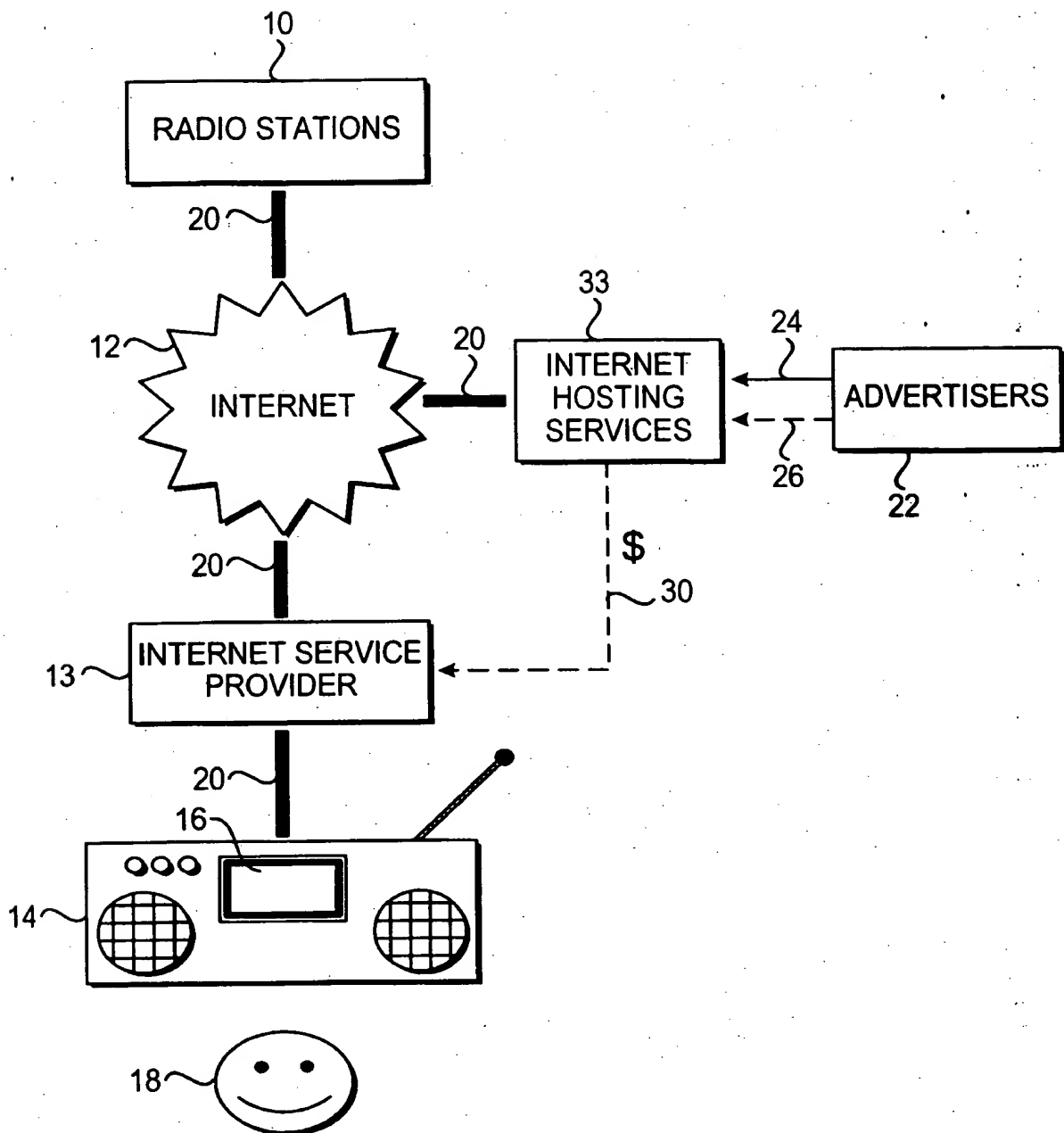


FIG. 3

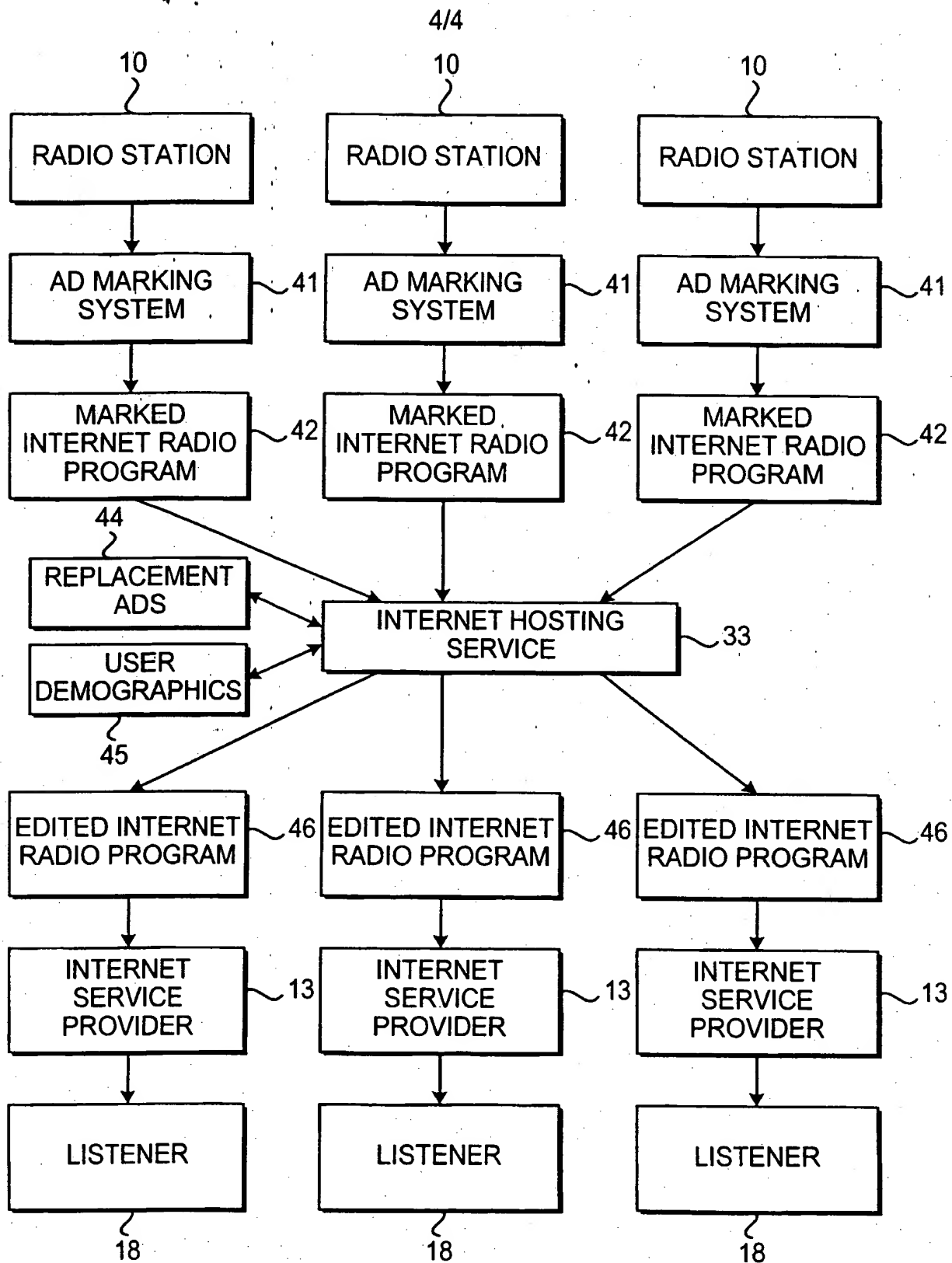


FIG. 4

## INTERNATIONAL SEARCH REPORT

 Intern Application No  
 PCT/US 00/16345

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G06F17/60 H04H7/00 H04H1/02

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F H04H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC, COMPENDEX

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 933 811 A (ANGLES PAUL D ET AL) 3 August 1999 (1999-08-03)	1-11
Y	column 2, line 45 -column 4, line 47 column 7, line 45 -column 8, line 67 column 15, line 17-24 column 20, line 58-61 column 21, line 15-60; claims 1-17; figures 1-11	15,18,21
X	WO 97 49241 A (BEN MOSHE GIL ;ANTMAN AMNON (IL)) 24 December 1997 (1997-12-24)	12
Y	the whole document	13-18,21
Y	EP 0 751 640 A (DIGITAL EQUIPMENT INT) 2 January 1997 (1997-01-02) column 5, line 1-29 column 6, line 25 -column 7, line 54; claims 1,2,4-9; figures 1,3-5	13,14, 16,17
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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- \*8\* document member of the same patent family

Date of the actual completion of the international search

23 November 2000

Date of mailing of the international search report

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Name and mailing address of the ISA

 European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 847 156 A (WOLFE ROBERT L) 10 June 1998 (1998-06-10) the whole document ---	1-11
A	EP 0 424 648 A (GEN INSTRUMENT CORP) 2 May 1991 (1991-05-02) column 8, line 3-47 column 9, line 8-47 column 11, line 20 -column 13, line 27; claims 1,5-10,13,15,16,20-22,26,27; figures 3,5 ---	12
E	US 6 112 192 A (CAPEK PETER GEORGE) 29 August 2000 (2000-08-29) the whole document -----	12,13, 15,16

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Information on patent family members

Intern

Application No

PCT/US 00/16345

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